REMARKS/ARGUMENTS

Applicant thanks the Examiner for the interview of June 2, 2005.

In the Office Action, the Examiner again rejects claims 1-32 under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent 5,583,792 to Li et al. in view of "*Computer Simulation for the Evaluation of Static and Dynamic Priority Schemes in an ATM Multiplexer with Multimedia Traffic*", S. Al-Barrak in further view of "*A Measurement-Based Admission Control Algorithm for Integrated Service Packet Networks*", S. Jamin et al.

In light of the cancellation of the pending claims, this rejection is now moot.

Applicant has added new claims 34-70. Applicant respectfully contends that the cited references fail to teach or suggest the newly added claims for reasons stated below.

The Li et al. Reference

Li et al. is directed to a method and apparatus that provides a general solution technique for the integration of traffic measurement and queuing analysis. The frequency-domain approach is used to combine the advanced techniques in two areas: signal processing and queuing analysis. In the traffic measurement component, standard signal processing techniques are used to obtain the steady-state and second-order statistics of a traffic stream. Second-order traffic statistics are collected by using standard parametric signal processing methods, such as Proxy, MUSIC, and ESPRIT, known as a class of eigenvalue-based algorithms. In the statistical matching component, new techniques are used for the construction of a special class of Markov chain modulated Poisson rate processes that can statistically match with each given traffic stream (or superposition of different traffic streams). In a third queuing analysis component, both steady state and time dependent solutions of buffer size, link capacity, loss rate, overload control and queuing behavior are obtained by the generalized Folding-algorithm.

The theory in Li et al. is not mathematically applicable to ATM networks. Li et al. uses the Markov Modulated Poisson Process (MMPP). MMPP not only outputs an *exponential* distribution but also is mathematically unable to describe and simulate the bursty nature of ATM traffic.

Moreover, there is no incentive to apply the teachings of Li et al. to ATM networks. The terms "ATM" or "asychronous transfer mode" do not appear anywhere in Li et al. Li et al. simply states that his invention is a "general solution technique for the integration of traffic measurement and queuing analysis."

The Al-Barrack et al. Reference

Al-Barrack et al. is directed to the evaluation of static and dynamic priority schemes for ATM multiplexers using digital computer simulation and has three main parts. The first provides a basic computer simulation model of an ATM multiplexer with multimedia traffic streams that enables investigation of static and dynamic priority schemes. The second uses the simulation model to study such schemes. The third investigates combined dynamic space and dynamic time priorities to provide better performance for ATM multiplexers in comparison to using dynamic time priority only. To generate data traffic, the Poisson process was used and, for the length of the data messages, the exponential distribution has been taken into account. To generate voice traffic, the Interrupted Poisson Process (IPP) was used for modeling a single voice source while two-state Markov Modulated Poisson Process (MMPP) was used for modeling N independent voice sources. To generate video traffic, the autoregressive process was used. Al-Barrack et al. describes a proposed scheme for *prioritizing* rather than *modeling* ATM traffic.

Al-Barrack et al. uses the Markov Modulated Poisson Process (MMPP) and Interrupted Poisson Process (IPP) to generate data and voice traffic, respectively. All Poisson models, including MMPP and IPP, output an *exponential* distribution (as noted by Al-Barrack et al.). Exponential distributions are mathematically unable to describe and simulate the bursty nature of ATM traffic.

The Examiner's reliance on this reference appears to be based on a reference at page 361, right-hand column, to a Gaussian or normal random process to generate random numbers. The random numbers are used to simulate the random bit rate during the nth frame of video traffic but not to generate the packet interarrival times of the video traffic. A lognormal algorithm is not mentioned anywhere in the reference.

The Jamin et al. Reference

Jamin, et al., is directed to a measurement-based admission control algorithm for predictive service, which allows occasional duty violations. Three models are used to simulate ATM traffic. An EXP model is used generate exponentially distributed ON and OFF times. A Long Range Dependent or LRD-Pareto model is used to provide Pareto distributed ON and OFF times. A LRD - Fractional Autoregressive Integrated Moving Average model is used to generate the number of fixed-size packets to be sent back to back in each ON period. Interarrivals of ON periods are of fixed length. At page 63, right-hand column, Jamin, et al., teaches that the duration of the LRD sources are taken from a lognormal distribution. The interarrival times of all flows are *exponentially* distributed.

The present invention is directed to describing the behavior of ATM traffic between ATM switches; Jamin et al. addresses the probabilistic distribution of traffic sources and describes various models for source traffic entering a generic integrated services network. The

terms "ATM" and "asynchronous transfer mode" do not appear anywhere in Jamin et al.'s article. Jamin et al.'s article is expressly applicable to Internet Protocol (IP) networks.

The traffic generation models discussed in Jamin et al. are not mathematically applicable to ATM networks. It is mathematically impossible for a source to be long range dependent (LRD) and have a lognormal distribution. LRD data has a normal, or Gaussian, distribution. Jamin et al. states that the durations of LRD sources are lognormally distributed. Jamin et al. states that the packet interarrival times of traffic flows are *exponentially* distributed. As noted, exponential distributions are mathematically unable to describe and simulate the bursty nature of ATM traffic.

The dependent claims provide further reasons for allowance.

Applicant wishes to clarify the intended meaning of certain claim language in light of the Federal Circuit decision "SuperGuide Corporation v. DirecTV Enterprises, Inc., et al., 358 F.3d 870 (Fed. Cir. 2004). In that decision, the Federal Circuit held, under the unique facts of that case, that the phrase "at least one of a desired program start time, a desired program end time, a desired program service, and a desired program type" means "at least one of a desired program start time, at least one of a desired program end time, at least one of a desired program service, and at least one of a desired program type".

Applicant has used the phrases "at least one of . . . and" and "and/or" in a number of claims and wishes to clarify to the Examiner the proper construction of this phrase. Applicant intended the phrases "at least one . . . and" and "and/or" as used in the claims to be an open-ended expression that is both conjunctive and disjunctive in operation. For example, the expressions "at least one of A, B and C" and "A, B, and/or C" mean A alone, B alone, C alone, A and B together, A and C together, B and C together, and A, B and C together. Applicant

believes that this construction is consistent with the Examiner's construction of the claims in the Office Action. If the Examiner disagrees with this construction, Applicant respectfully requests that the Examiner notify Applicant accordingly so that Applicant can further amend the claims.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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Date: July 7, 2005

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